



Ether-GSH8TW v2 / 8TW+v2

Pure Gigabit Web Management Switch

User's Manual



www.airlive.com

Declaration of Conformity

We, Manufacturer/Importer

OvisLink Corp.

**5F., NO.6, Lane 130, Min-Chuan Rd.,
Hsin-Tien City, Taipei County, Taiwan**

Declare that the product

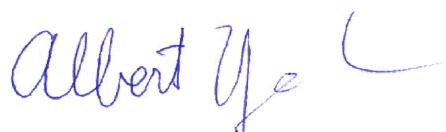
**8 / 8+2 Ports Pure Gigabit Web Management Switch
AirLive Ether-GSH8TW v2/8TW+ v2
is in conformity with**

In accordance with 2004/108/EC Directive and 1999/5 EC-R & TTE Directive

<u>Clause</u>	<u>Description</u>
■ EN 55022:2006	Limits and methods of measurement of radio disturbance characteristics of information technology equipment
■ EN 61000-3-2:2006	Disturbances in supply systems caused by household appliances and similar electrical equipment "Harmonics"
■ EN 61000-3-3:1995+ A1:2001+A2:2005	Disturbances in supply systems caused by household appliances and similar electrical equipment "Voltage fluctuations"
■ EN 55024:1998+A1 :2001+A2:2003	Information Technology equipment-Immunity characteristics-Limits And methods of measurement
■ EN 60950-1:2001+A11 :2004	Safety for information technology equipment including electrical business equipment
■ CE marking	CE

Manufacturer/Importer

Signature



Name

Albert Yeh

Position / Title

Vice President

(Stamp)

Date : 2008/4/15

AirLive Ether-GSH8TW v2/8TW+ v2 CE Declaration Statement

Country	Declaration	Country	Declaration
cs Česky [Czech]	OvisLink Corp. tímto prohlašuje, že tento AirLive Ether-GSH8TW v2/8TW+ v2 je ve shodě se základními požadavky a dalšími příslušnými ustanoveními směrnice 1999/5/ES.	lt Lietuvių [Lithuanian]	Šiuo OvisLink Corp. deklaruojas, kad šis AirLive Ether-GSH8TW v2/8TW+ v2 atitinka esminius reikalavimus ir kitas 1999/5/EB Direktyvos nuostatas.
da Dansk [Danish]	Undertegnede OvisLink Corp. erklærer herved, at følgende udstyr AirLive Ether-GSH8TW v2/8TW+ v2 overholder de væsentlige krav og øvrige relevante krav i direktiv 1999/5/EU.	nl Nederlands [Dutch]	Hierbij verklaart OvisLink Corp. dat het toestel AirLive Ether-GSH8TW v2/8TW+ v2 in overeenstemming is met de essentiële eisen en de andere relevante bepalingen van richtlijn 1999/5/EG.
de Deutsch [German]	Hiermit erklärt OvisLink Corp., dass sich das Gerät AirLive Ether-GSH8TW v2/8TW+ v2 in Übereinstimmung mit den grundlegenden Anforderungen und den übrigen einschlägigen Bestimmungen der Richtlinie 1999/5/EG befindet.	mt Malta [Maltese]	Hawnhekk, OvisLink Corp, jiddikjara li dan AirLive Ether-GSH8TW v2/8TW+ v2 jikkonforma mal-ħtiġijiet essenziali u ma provvedimenti oħrajn relevanti li hemm fid-Dirrettiva 1999/5/EC.
et Eesti [Estonian]	Käesolevaga kinnitab OvisLink Corp. seadme AirLive Ether-GSH8TW v2/8TW+ v2 vastavust direktiivi 1999/5/EÜ põhinõuetele ja nimetatud direktiivist tulenevatele teistele asjakohastele sätetele.	hu Magyar [Hungarian]	Az OvisLink Corporation kijelenti, hogy az AirLive Ether-GSH8TW v2/8TW+ v2 megfelel az 1999/05/CE irányelv alapvető követelményeinek és egyéb vonatkozó rendelkezéseinek.
en English	Hereby, OvisLink Corp., declares that this AirLive Ether-GSH8TW v2/8TW+ v2 is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.	pl Polski [Polish]	Niniejszym OvisLink Corp oświadcza, że AirLive Ether-GSH8TW v2/8TW+ v2 jest zgodny z zasadniczymi wymogami oraz pozostałymi stosownymi postanowieniami Dyrektywy 1999/5/EC.
es Español [Spanish]	Por medio de la presente OvisLink Corp. declara que el AirLive Ether-GSH8TW v2/8TW+ v2 cumple con los requisitos esenciales y cualesquiera otras disposiciones aplicables o exigibles de la Directiva 1999/5/CE.	pt Português [Portuguese]	OvisLink Corp declara que este AirLive Ether-GSH8TW v2/8TW+ v2 está conforme com os requisitos essenciais e outras disposições da Directiva 1999/5/CE.
el Ελληνική [Greek]	ΜΕ ΤΗΝ ΠΑΡΟΥΣΑ OvisLink Corp. ΔΗΛΩΝΕΙ ΟΤΙ AirLive Ether-GSH8TW v2/8TW+ v2 ΣΥΜΜΟΡΦΩΝΕΤΑΙ ΠΡΟΣ ΤΙΣ ΟΥΣΙΩΔΕΙΣ ΑΠΑΙΤΗΣΕΙΣ ΚΑΙ ΤΙΣ ΛΟΙΠΕΣ ΣΧΕΤΙΚΕΣ ΔΙΑΤΑΞΕΙΣ ΤΗΣ ΟΔΗΓΙΑΣ 1999/5/EK.	sl Slovensko [Slovenian]	OvisLink Corp izjavlja, da je ta AirLive Ether-GSH8TW v2/8TW+ v2 v skladu z bistvenimi zahtevami in ostalimi relevantnimi določili direktive 1999/5/ES.
fr Français [French]	Par la présente OvisLink Corp. déclare que l'appareil AirLive Ether-GSH8TW v2/8TW+ v2 est conforme aux exigences essentielles et aux autres dispositions pertinentes de la directive 1999/5/CE	sk Slovensky [Slovak]	OvisLink Corp týmto vyhlašuje, že AirLive Ether-GSH8TW v2/8TW+ v2 spĺňa základné požiadavky a všetky príslušné ustanovenia Smernice 1999/5/ES.
it Italiano [Italian]	Con la presente OvisLink Corp. dichiara che questo AirLive Ether-GSH8TW v2/8TW+ v2 è conforme ai requisiti essenziali ed alle altre disposizioni pertinenti stabilite dalla direttiva 1999/5/CE.	fi Suomi [Finnish]	OvisLink Corp vakuuttaa täten että AirLive Ether-GSH8TW v2/8TW+ v2 tyyppinen laite on direktiivin 1999/5/EY oleellisten vaatimusten ja sitä koskevien direktiivin muiden ehtojen mukainen
lv Latviski [Latvian]	Ar šo OvisLink Corp. deklarē, ka AirLive Ether-GSH8TW v2/8TW+ v2 atbilst Direktīvas 1999/5/EK būtiskajām prasībām un citiem ar to saistītajiem noteikumiem.	íslenska [Icelandic]	Hér með lýsir OvisLink Corp yfir því að AirLive Ether-GSH8TW v2/8TW+ v2 er í samræmi við grunnkröfur og aðrar kröfur, sem gerðar eru í tilskipun 1999/5/EC.
sv Svenska [Swedish]	Härmad intygar OvisLink Corp. att denna AirLive Ether-GSH8TW v2/8TW+ v2 står i överensstämmelse med de väsentliga egenskapskrav och övriga relevanta bestämmelser som framgår av direktiv 1999/5/EG.	no Norsk [Norwegian]	OvisLink Corp erklærer herved at utstyret AirLive Ether-GSH8TW v2/8TW+ v2 er i samsvar med de grunnleggende krav og øvrige relevante krav i direktiv 1999/5/EG.

A copy of the full CE report can be obtained from the following address:

OvisLink Corp.
5F, No.6 Lane 130,
Min-Chuan Rd, Hsin-Tien City,
Taipei, Taiwan, R.O.C.

This equipment may be used in AT, BE, CY, CZ, DK, EE, FI, FR, DE, GR, HU, IE, IT, LV, LT, LU, MT, NL, PL, PT, SK, SI, ES, SE, GB, IS, LI, NO, CH, BG, RO, TR

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Chapter 1 Introduction

Ether-GSH8TW v2/GSH8TW+ v2 is high speed switch that provides up to 8 10/100/1000Mbps copper Ethernet ports (2 x MiniGBIC for Ether-8TW+ v2). Besides, it provides many advanced functions for nowadays variety of network application but at lower costs. Users doesn't have to learn many sophisticated management functions which are usually shown in SNMP switch but just to learn some simple or common control or setting function through either out-of-band RS232 port or Ethernet port. However, some new, advanced and important functions such as Tag-VLAN, Trunking, RSTP and IGMP are also supported same as SNMP switch. This means, users doesn't have to pay high costs as traditional layer 2 SNMP switch while one still can get advanced or common function to meet the requirements of an advanced network application. This makes it very suitable for small or medium size company to build up simple network at beginning phase with lower cost. An optional long-ear accessory also makes it possible to operate in the rack mount environment.

Non-blocking and maximum wire speed performance is designed on all switched ports. It not only supports auto-negotiation but also AUTO-MDIX function on all switched 8 10/100/1000M RJ-45 Gigabit copper ports no matter running with half or full duplex mode. These functions make users easy to use and reduce the matching effort between straight and cross-over line issues.

8G web smart switch supports both port-based and 802.1Q (tag-based) VLAN to catch-up the application needed for coming VLAN age. To increase bandwidth application, it supports up to 4 trunk groups with maximum 8 ports on one trunk, moreover, these trunk ports are with fair-over function to provide redundant back-up when one or some of trunk ports malfunction. Moreover, to reduce convergent time of STP protocol, Rapid STP (RSTP) is supported. To support multicast application IGMP is also supported.

Full LED status display eases user's installation and inspection, a reset button is also provided to allow users to easily go back to default setting.

1.1 Main Features

This switch provides the following main features:

- Non-blocking, full-line speed, store-and-forward
- Support jumbo frame, Max. packet length 9600 bytes
- Auto-Negotiation and Auto-MDIX on all 10/100/1000M copper ports
- Up to 8 10/100/1000 RJ-45 copper ports
- 144K byte packet buffer, 8K MAC entries
- Support port-based VLAN and tag-based (802.1Q) VLAN
- Support RSTP, IGMP, DHCP
- Support “relocate port number” to “ http operation ”
- Port trunk with fail-over capability
- Support flow control for both full/half duplex operations
- Support multicast storm, broadcast storm control as well as flooding control
- Support port mirroring
- Support Telnet
- LED display for each port to show link and activity status
- Desktop and optional rack-mountable kit
- Reset to default
- Field-code-upgrade through web browser

1.2 Start to Manage This Switch

Either way user may start to manage this switch: Web mode through Ethernet port or Terminal mode through RS232 port.

- ◆ Web mode default setting:

Default IP Address: 192.168.1.100

Default IP mask: 255.255.255.0

Default gateway: 192.168.223.254

Default Password: "airlive"

- ◆ Terminal mode default setting:

Baud rate: 115,200, attribute: 8, None, 1, None

Terminal mode operation:

Default Password: "airlive"

Once terminal is connected, the basic operation rule are shown below

Press "?" to find root operation page, then choose command by typing little alphabets

After enter command page, Press "?" to find command parameters and format, furthermore, type "command ?" to get explanation.

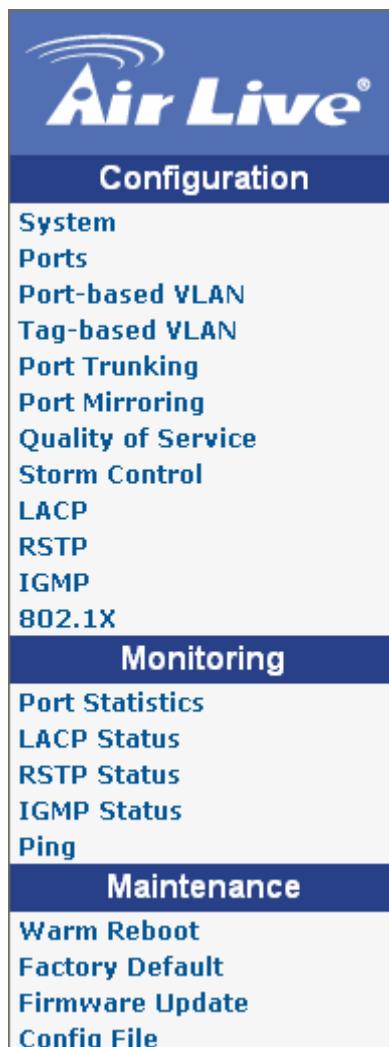
Type "up" or "/" to go back to previous page

1.3 LED Indicator

LED Indicator	Color	Status	Meaning
System LED			
Power	● Green	- ON - OFF	- Power on - Power off
Station port LEDs			
100M/ACT	● Green	- ON - OFF - Blinking	- Port is connected - Port is not connected - Transmitting/Receiving
1000M/ACT	● Green	- ON - OFF - Blinking	- Port is connected - Port is not connected - Transmitting/Receiving
MiniGBIC slot LEDs			
7X	● Green	- ON - OFF - Blinking	- 7 port is connected - 7 port is not connected - Transmitting/Receiving
8X	● Green	- ON - OFF - Blinking	- 8 port is connected - 8 port is not connected - Transmitting/Receiving

Chapter 2 Web management

After login is successfully validated, the switch's home page will show up. The left part on the page provides the *function menus*, while the right part provides the individual configuration value or system parameters value. Function manuals are divided into three categories: **Configuration**, **Monitoring** and **Maintenance**, and all functions are shown briefly below.



2.1 Configurations

2.1.1 System

The system diagram shows general common system information, they are H/W, F/W version, MAC address, IP address, subnet mask, IP gateway, default VLAN value of management port, name, password, timeout value, and SNMP communities...etc. Once the user finish the setting, he must press the “ Apply “ button to execute all his setting, and whenever he needs, he may press the “ Refresh “ button to get updated status of system information.

System Configuration

Model Name	Ether-GSH8TW+ V2	
MAC Address	00-4f-54-20-00-01	
F/W Version	3.9	
DHCP Enabled	<input type="checkbox"/>	
Static IP Address	192.168.1.100	
Subnet Mask	255.255.255.0	
Default Gateway	192.168.1.254	
HTTP Listening Port Number	80	(1024--65535)
Tag VLAN Management Group	1 <input type="button" value="▼"/>	
Name	<input type="text"/>	
Password	<input type="password" value="*****"/>	
Inactivity Timeout (secs)	0	(0, 60--10000)
SNMP enabled	<input checked="" type="checkbox"/>	
SNMP Trap destination	0.0.0.0	
SNMP Read Community	public	
SNMP Write Community	private	
SNMP Trap Community	public	

2.1.1.1 DHCP

The default DHCP is off, so Default IP or user defined IP is used when this machine is turning-ON, but if this switch needs an IP assigned from DHCP server, user may click the square field and then press “ Apply “ to get an IP which will be assigned by DCHP server “. User must be aware that if he enables DHCP from web page, and if the DHCP server is working, then after enabling DHCP, he will lose contact of the web page, because the IP address has been changed. **At this moment, go through terminal mode and check configuration of IP, then get Dynamic IP to return to web page.**

2.1.1.2 Relocate HTTP port number

The default port number of **HTTP command** is 80, but unauthorized users may intrude this switch if he knows the IP of this switch. Network manager may relocate this port number to other value, from 1024 to 65535, the same idea as above, once network manager change the value of HTTP’s port number, he will lose contact and he must regain web page by command modified as below:

http://192.168.1.100:port value

2.1.1.3 Tag VLAN management group (CPU port)

At first time you turn on this device, all ports belong to default VLAN ID group (VID = 1), so they can communicate to each other, and hence any port can be used as web management port to talk with CPU port inside. But, for example, assume user uses port 1 as web management port, then user create VLAN ID = 10 on port 7,8 and create another VLAN ID = 20 on port 5,6, now 3 VLAN groups will be shown on VLAN group table after he press “ Apply “ button. If VLAN 10 and VLAN ID 20 must be isolated, then user must delete member port 5,6,7,8 in default VLAN group (VID = 1). Be aware that CPU port still remains on VID = 1 group now, user can only perform web management through one of 4 ports, that is port 1,2,3,4, **but if user want to perform web management from other port in existing different VLAN group, for example port 8 in VID =10, then after creating new VLAN groups, he must go to system configuration page, and select Tag VLAN Management Group to 10 by pressing “ Apply “ command**, then move RJ-45 (web management port) from port 1 to port 8, then user can perform web management from new RJ-45 port again. But if user forgets which group that CPU belongs to, there are two ways to solve this condition below.

- (1) Through console port, check configuration of IP if he gets password
- (2) Press “**Reset**” button **few seconds**, let system return to default settings, that is,
---- >> IP address = 192.168.1.100; ... VID = 1, all settings return to factory default

2.1.2 Ports

Port status page always shows current port status of all 8 ports. User can set link mode, enable or disable flow control and jumbo frame. However, be noticed that the jumbo frame is global setting, it can't be set on individual port but on all ports at a time. A default diagram is shown below.

Port Configuration				
Port	Link Status	Link Mode	Flow Control	Max. Framesize (1518 ~ 9600 Bytes)
1	Down	Auto Speed	<input type="checkbox"/>	1518
2	Down	Auto Speed	<input type="checkbox"/>	1518
3	Down	Auto Speed	<input type="checkbox"/>	1518
4	Down	Auto Speed	<input type="checkbox"/>	1518
5	Down	Auto Speed	<input type="checkbox"/>	1518
6	Down	Auto Speed	<input type="checkbox"/>	1518
7	1000FDX	Auto Speed	<input type="checkbox"/>	1518
8	Down	Auto Speed	<input type="checkbox"/>	1518

Choose and click the ports you want to set. For example, choose port 1, and set port 1 Flow Control enable, then press “Apply”. After execution, diagram will be shown as below.

Port Configuration				
Port	Link Status	Link Mode	Flow Control	Max. Framesize (1518 ~ 9600 Bytes)
1	Down	Auto Speed	<input checked="" type="checkbox"/>	1518
2	Down	Auto Speed	<input type="checkbox"/>	1518
3	Down	Auto Speed	<input type="checkbox"/>	1518
4	Down	Auto Speed	<input type="checkbox"/>	1518
5	Down	Auto Speed	<input type="checkbox"/>	1518
6	Down	Auto Speed	<input type="checkbox"/>	1518
7	1000FDX	Auto Speed	<input type="checkbox"/>	1518
8	Down	Auto Speed	<input type="checkbox"/>	1518

2.1.3 Port-based VLAN

Port-based VLAN is a kind of VLAN which is a group of ports marked as a kind by group ID. Different VLAN (different ID) can't communicate to each other. Before the setting, user must be aware of that there is a default Port-based VLAN, his group ID is 1. So, if user wants to set another new port-based VLAN, better set another group ID rather than 1. After pressing "Apply" button, the screen will show an updated VLAN Group table no matter user add a new group or delete a VLAN group. The important thing is that port-based VLAN is valid only within the same device; it will never be valid cross the devices. A default diagram is shown below.

Port-based VLAN (User Group) Configuration

Port-based VLAN Group (User Group) Table								
No.	Group ID	Member Port						
		1	2	3	4	5	6	7
1	1	<input checked="" type="checkbox"/>						

Add/Edit a VLAN (User) Group								
Group ID	Member Port							
	1	2	3	4	5	6	7	8
1	<input checked="" type="checkbox"/>							

Refresh Delete Apply

Choose and click the ports you want to group. For example, choose port 1, port 2 and set their group ID 2, then press "Apply". After execution, diagram will be shown as below.

Port-based VLAN (User Group) Configuration

Port-based VLAN Group (User Group) Table								
No.	Group ID	Member Port						
		1	2	3	4	5	6	7
1	1	<input checked="" type="checkbox"/>						
2	2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Add/Edit a VLAN (User) Group								
Group ID	Member Port							
	1	2	3	4	5	6	7	8
2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>					

Refresh Delete Apply

2.1.4 Tag-based VLAN

Tag-based VLAN is another kind of VLAN which is a group of ports marked as same kind by assigning a tag-value on each port. Same as port-based VLAN, different VLAN (different ID) can't communicate to each other, and before the setting, there is a default tag-based VLAN, which ID is 1 (VLAN ID = 1). So, if user wants to create another new tag-based VLAN, better set another VLAN ID rather than 1 (tag-based VLAN ID ranged from 1 ~ 4094). After pressing "Apply" button, the screen will show a new tag-based VLAN Group table, on the contrary, a tag-VLAN will be vanished if user deletes a VLAN group. **Two important things must be emphasized here**, one is that tag-based VLAN members are valid not only within same device, but also cross the devices as long as they are with same VLAN ID; the other important thing is user must keep in mind that the **VLAN ID of CPU port must be one of the VLAN group if user wants to manage through one of the ports of that VLAN group**. Otherwise, if there is no port with same VLAN ID as CPU port, the web management, in-band control, will be failed because different VLAN (different ID) can't communicate to each other.

A default diagram is shown below.

Tag-based (802.1q) VLAN Configuration

Tag-based (802.1q) VLAN Group Table										
Select	No.	VLAN ID	Member Port							
			1	2	3	4	5	6	7	8
<input checked="" type="radio"/>	1	1	<input checked="" type="checkbox"/>							

Add/Edit a VLAN Group										
VLAN ID (1-4094)			Member Port							
			1	2	3	4	5	6	7	8
			<input type="checkbox"/>							

Port Config

Refresh **Delete** **Apply**

When you first turn on this device, all ports belong to default VLAN ID group (VID = 1), so they can communicate to each other, and hence any port can be used as web management port to talk with CPU port inside. But, for example, assume user uses port 1 as web management port, then user create VLAN ID = 10 on port 7, 8 and create another VLAN ID = 20 on port 5, 6. Now 3 VLAN groups will be shown on VLAN group table after he presses "Apply" button.

If VLAN 10 and VLAN ID 20 must be isolated, then user must delete member port 5,6,7,8 in default VLAN group (VID = 1). See below.

Tag-based (802.1q) VLAN Configuration

Tag-based (802.1q) VLAN Group Table								
Select	No.	VLAN ID	Member Port					
			1	2	3	4	5	6
<input checked="" type="radio"/>	1	1	<input checked="" type="checkbox"/>					
<input type="radio"/>	2	10	<input type="checkbox"/>	<input checked="" type="checkbox"/>				
<input type="radio"/>	3	20	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Add/Edit a VLAN Group										
VLAN ID (1-4094)			Member Port							
1			1	2	3	4	5	6	7	8
			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

[Port Config](#)

[Refresh](#) [Delete](#) [Apply](#)

Be aware that CPU port still remains on VID = 1 group now, user can only perform web management through one of 4 ports, which is port 1,2,3,4. **But if user want to perform web management from other port existing in different VLAN group, for example port 8 in VID =10, then after creating new VLAN groups, he must go to System Configuration page, and select Tag VLAN Management Group to 10 by pressing “Apply” command**, then move RJ-45 (web management port) from port 1 to port 8, then user can perform web management from new RJ-45 port again. But if user forgets what group that CPU belongs to, there are two ways to solve this condition below.

- (1) Through console port, check Configuration of IP if he gets password
- (2) Press “**Reset**” button **few seconds**, let system return to default settings, that is,
---- >> IP address = 192.168.1.100; ... VID = 1, all settings return to factory default

After assigning a tag VLAN, there are some attributes parameters that must be assigned for some tag-VLAN application. Here below are explanation when entering the “Port Config”, they are:

1. VLAN Aware mode:

- Enable - When Tag-VLAN function is applied on this port, user may enable VLAN Aware associated with this port, and then ingress frames and egress frames will be handled according to the following parameters' setting.
- Disable – default state, this means, switch doesn't do VLAN tag stripping and insertion.

2. Ingress filtering:

- Enable - Check ingress frame VLAN ID. Ingress frame will be dropped if this frame's VID is not the same as the VID of the ingress port which belongs to a member of a "VLAN group"
- Disable – the Ingress frame will be flood if VID is not the same

3. Accept Packet Type:

- ALL - Accept all ingress frames
- Tagged only - Only accept ingress frames with VLAN tag

4. Port VID:

Set **Port VID** = value (1 ~ 4096), then an untagged ingress frame will bear this value at its VID. Usually this port is connected to a un-tag device (legacy device), then this frame becomes a tagged frame, hence, it can be handled inside the switch as a member of the same VID group. Set "None" for those tagged frames, usually this port is now connected to a tag-device.

5. Egress Tag enabled

When Egress Tag is enabled, then, the tag will be added into egress frames and then sent out to the device that supports tagged-VLAN. When this is disabled, tag will not be added into egress frame and then sent to device that does not support tagged-VLAN.

Tag VLAN Per Port Configuration

Port	VLAN aware Enabled	Ingress Filtering Enabled	Acceptable Packet Type	Port VID	Egress Tagging Enabled
1	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="radio"/> All <input type="radio"/> Tagged Only	1 <input type="button" value="▼"/>	<input type="checkbox"/>
2	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="radio"/> All <input type="radio"/> Tagged Only	1 <input type="button" value="▼"/>	<input type="checkbox"/>
3	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="radio"/> All <input type="radio"/> Tagged Only	1 <input type="button" value="▼"/>	<input type="checkbox"/>
4	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="radio"/> All <input type="radio"/> Tagged Only	1 <input type="button" value="▼"/>	<input type="checkbox"/>
5	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="radio"/> All <input type="radio"/> Tagged Only	1 <input type="button" value="▼"/>	<input type="checkbox"/>
6	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="radio"/> All <input type="radio"/> Tagged Only	1 <input type="button" value="▼"/>	<input type="checkbox"/>
7	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="radio"/> All <input type="radio"/> Tagged Only	1 <input type="button" value="▼"/>	<input type="checkbox"/>
8	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="radio"/> All <input type="radio"/> Tagged Only	1 <input type="button" value="▼"/>	<input type="checkbox"/>

2.1.5 Port Trunking

A default diagram is shown below, and up to 4 groups are provided.

Aggregation/Trunking Configuration

Group\Port	1	2	3	4	5	6	7	8
Normal	<input checked="" type="radio"/>							
Group 1	<input type="radio"/>							
Group 2								
Group 3								
Group 4								

Choose and click the trunk ports you want to group. For example, choose port 1, port 2 into group 1, then press “Apply”. After execution, diagram will be shown as below.

Aggregation/Trunking Configuration

Group\Port	1	2	3	4	5	6	7	8
Normal	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
Group 1	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Group 2	<input type="radio"/>							
Group 3								
Group 4								

2.1.6 Port Mirroring

A default diagram is shown below.

Port Mirroring Configuration

Mirror Port	1 <input type="button" value="▼"/>																		
<table border="1"><thead><tr><th>Port</th><th>Mirror Source</th></tr></thead><tbody><tr><td>1</td><td><input type="checkbox"/></td></tr><tr><td>2</td><td><input type="checkbox"/></td></tr><tr><td>3</td><td><input type="checkbox"/></td></tr><tr><td>4</td><td><input type="checkbox"/></td></tr><tr><td>5</td><td><input type="checkbox"/></td></tr><tr><td>6</td><td><input type="checkbox"/></td></tr><tr><td>7</td><td><input type="checkbox"/></td></tr><tr><td>8</td><td><input type="checkbox"/></td></tr></tbody></table>		Port	Mirror Source	1	<input type="checkbox"/>	2	<input type="checkbox"/>	3	<input type="checkbox"/>	4	<input type="checkbox"/>	5	<input type="checkbox"/>	6	<input type="checkbox"/>	7	<input type="checkbox"/>	8	<input type="checkbox"/>
Port	Mirror Source																		
1	<input type="checkbox"/>																		
2	<input type="checkbox"/>																		
3	<input type="checkbox"/>																		
4	<input type="checkbox"/>																		
5	<input type="checkbox"/>																		
6	<input type="checkbox"/>																		
7	<input type="checkbox"/>																		
8	<input type="checkbox"/>																		
<input type="button" value="Apply"/>	<input type="button" value="Refresh"/>																		

Choose and click the ports you want to monitor. For example, choose port 2 is mirror port, and the mirror source is port 5, and then press “Apply”. After execution, diagram will be shown as below.

Port Mirroring Configuration

Mirror Port	2 <input type="button" value="▼"/>																		
<table border="1"><thead><tr><th>Port</th><th>Mirror Source</th></tr></thead><tbody><tr><td>1</td><td><input type="checkbox"/></td></tr><tr><td>2</td><td><input type="checkbox"/></td></tr><tr><td>3</td><td><input type="checkbox"/></td></tr><tr><td>4</td><td><input type="checkbox"/></td></tr><tr><td>5</td><td><input checked="" type="checkbox"/></td></tr><tr><td>6</td><td><input type="checkbox"/></td></tr><tr><td>7</td><td><input type="checkbox"/></td></tr><tr><td>8</td><td><input type="checkbox"/></td></tr></tbody></table>		Port	Mirror Source	1	<input type="checkbox"/>	2	<input type="checkbox"/>	3	<input type="checkbox"/>	4	<input type="checkbox"/>	5	<input checked="" type="checkbox"/>	6	<input type="checkbox"/>	7	<input type="checkbox"/>	8	<input type="checkbox"/>
Port	Mirror Source																		
1	<input type="checkbox"/>																		
2	<input type="checkbox"/>																		
3	<input type="checkbox"/>																		
4	<input type="checkbox"/>																		
5	<input checked="" type="checkbox"/>																		
6	<input type="checkbox"/>																		
7	<input type="checkbox"/>																		
8	<input type="checkbox"/>																		
<input type="button" value="Apply"/>	<input type="button" value="Refresh"/>																		

2.1.7 Quality of Service

There are 4 class priorities that can be set for each port: Low, Normal, Medium and High. Because there are 8 priority levels (0 ~ 7) for each port, so 8 priorities map into 4 classes must be done in this QoS control.

There are 3 QoS Mode can be chosen: Port-based, 802.1P and DSCP. The frames send not only per priority setting but also per Queue Mode setting. **Strict Mode** means highest priority setting gets first service to send frames, the lower priority frames must wait until all other higher priority frames are sent (serviced), and then it gets service. **WRR Mode** means different priorities are with different weighting to get service, that is, within a time period. The service times (chance) are a ratio among these 4 classes, user may choose one of preset setting from the manual. A default diagram with Strict Queue Mode is shown below.

Quality of Service (QoS) Configuration

Queue Mode	<input checked="" type="radio"/> Strict <input type="radio"/> WRR NOTE: WRR is not supported in Jumbo Frame mode while max. frame size > 1518 bytes in any port.																		
QoS Mode	Port-based <input type="button" value="▼"/>																		
<table border="1" style="width: 100%; border-collapse: collapse;"><caption>Default Class Table</caption><thead><tr><th style="width: 10%;">Port</th><th style="width: 90%;">Default Class</th></tr></thead><tbody><tr><td>1</td><td>high <input type="button" value="▼"/></td></tr><tr><td>2</td><td>high <input type="button" value="▼"/></td></tr><tr><td>3</td><td>high <input type="button" value="▼"/></td></tr><tr><td>4</td><td>high <input type="button" value="▼"/></td></tr><tr><td>5</td><td>high <input type="button" value="▼"/></td></tr><tr><td>6</td><td>high <input type="button" value="▼"/></td></tr><tr><td>7</td><td>high <input type="button" value="▼"/></td></tr><tr><td>8</td><td>high <input type="button" value="▼"/></td></tr></tbody></table>		Port	Default Class	1	high <input type="button" value="▼"/>	2	high <input type="button" value="▼"/>	3	high <input type="button" value="▼"/>	4	high <input type="button" value="▼"/>	5	high <input type="button" value="▼"/>	6	high <input type="button" value="▼"/>	7	high <input type="button" value="▼"/>	8	high <input type="button" value="▼"/>
Port	Default Class																		
1	high <input type="button" value="▼"/>																		
2	high <input type="button" value="▼"/>																		
3	high <input type="button" value="▼"/>																		
4	high <input type="button" value="▼"/>																		
5	high <input type="button" value="▼"/>																		
6	high <input type="button" value="▼"/>																		
7	high <input type="button" value="▼"/>																		
8	high <input type="button" value="▼"/>																		
<input type="button" value="Apply"/> <input type="button" value="Cancel"/>																			

Choose the port-based priority level for each port you want to set, and then ports will get priority service as setting. For example, under Strict Mode, Port 5,6,7,8 are set as “ low ”, port 1,2,3,4 are set as high, medium, normal and low. Then, after “Apply”, usually port 1 will get service at most of time and even all of the time. When users choose the 802.1P priority, this means frames are with VLAN Tag inside the switch. The priority in the Tagged frame (4 bytes Tag in total) must be set by application program, or set by user in Default Priority Table if the device connected to that port is legacy device which does not support Tag. That is, user must set Priority for legacy device at each legacy port. 8 priority levels map into 4 classes also must be done the same as explained in previous paragraph.

Quality of Service (QoS) Configuration

Queue Mode	<input type="radio"/> Strict <input checked="" type="radio"/> WRR NOTE: WRR is not supported in Jumbo Frame mode while max. frame size > 1518 bytes in any port.
WRR Weight	The ratio of Low / Normal / Medium / High queue 1:1:1:5
QoS Mode	802.1p
Prioritize Traffic	Custom

Default Priority Table								
Port	1	2	3	4	5	6	7	8
Priority	0	0	0	0	0	0	0	0

802.1p Priority - Class Mapping Table

Priority	Class	Priority	Class	Priority	Class	Priority	Class
0	normal	1	low	2	low	3	normal
4	medium	5	medium	6	high	7	high

2.1.8 Storm Control

A default diagram is shown below.

Storm Control Configuration

Storm Control Number of frames per second	
Broadcast Rate	No Limit <input type="button" value="▼"/>
Multicast Rate	No Limit <input type="button" value="▼"/>
Flooded Unicast Rate	No Limit <input type="button" value="▼"/>

Choose and click the type of storm you want to control. For example, choose Broadcast storm with 3,964 frames per second as upper limit, once the Broadcast frame rate is higher than 3,964 frames per second, this port will be disabled. Press “Apply”, after execution, diagram will be shown below.

Storm Control Configuration

Storm Control Number of frames per second	
Broadcast Rate	3964 <input type="button" value="▼"/>
Multicast Rate	No Limit <input type="button" value="▼"/>
Flooded Unicast Rate	No Limit <input type="button" value="▼"/>

2.1.9 LACP

Different from the static port trunking, LACP provides another way to dynamically aggregate port to a group (trunk) according to IEEE 802.3ad. Once the protocol is enabled, the ports to be trunked by LACP will be executed automatically after press “Apply”. A default diagram is shown below.

LACP Port Configuration

Port	Protocol Enabled	Key Value
1	<input type="checkbox"/>	auto
2	<input type="checkbox"/>	auto
3	<input type="checkbox"/>	auto
4	<input type="checkbox"/>	auto
5	<input type="checkbox"/>	auto
6	<input type="checkbox"/>	auto
7	<input type="checkbox"/>	auto
8	<input type="checkbox"/>	auto

Two parameters need to be set per port basis in this webpage:

- **Protocol Enabled** – to enable/disable LACP protocol for a port.
- **Key Value** – a number (1 ~ 255) to identify the LACP group for a port. All member ports in a LACP group have the same key values. Key number will be automatically generated if “auto” value is set.

Choose and click the trunk ports you want to group. For example, select port 5, 6, 7 and port 8 to group into a LACP group with key value “auto” for all ports, then press “Apply” to activate the setting. The figure is shown below.

LACP Port Configuration

Port	Protocol Enabled	Key Value
1	<input type="checkbox"/>	auto
2	<input type="checkbox"/>	auto
3	<input type="checkbox"/>	auto
4	<input type="checkbox"/>	auto
5	<input checked="" type="checkbox"/>	auto
6	<input checked="" type="checkbox"/>	auto
7	<input checked="" type="checkbox"/>	auto
8	<input checked="" type="checkbox"/>	auto

:

2.1.10 RSTP

The Spanning-Tree Protocol (STP) is IEEE 802.1d standardized method for avoiding loops in switched networks. Enable STP to ensure that only one path at a time is active between any two nodes on the network.

The Rapid-Spanning-Tree-Protocol (RSTP) is a more advanced protocol than STP according to IEEE 802.1w standard. RSTP can shorten spanning tree convergent time while network topology is changed. A default diagram is shown below.

RSTP Configuration

System Configuration	
System Priority	32768
Hello Time	2
Max Age	20
Forward Delay	15
Force version	Normal

Port Configuration				
Port	Protocol Enabled	Edge	Path Cost	
Aggregations	<input type="checkbox"/>			
1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	auto	
2	<input type="checkbox"/>	<input checked="" type="checkbox"/>	auto	
3	<input type="checkbox"/>	<input checked="" type="checkbox"/>	auto	
4	<input type="checkbox"/>	<input checked="" type="checkbox"/>	auto	
5	<input type="checkbox"/>	<input checked="" type="checkbox"/>	auto	
6	<input type="checkbox"/>	<input checked="" type="checkbox"/>	auto	
7	<input type="checkbox"/>	<input checked="" type="checkbox"/>	auto	
8	<input type="checkbox"/>	<input checked="" type="checkbox"/>	auto	

Use the following parameters in the webpage to configure RSTP function:

■ **System Configuration**

- **System Priority** – A value to identify the root bridge. The bridge with lowest value has the highest priority and is selected as the root. 16 numbers are provided in this field from 0 to 61140 in increments of 4096.
- **Hello Time** -- the number of seconds among the transmission of Spanning-Tree Protocol configuration messages. Enter a number 1 through 10. (default is 2)
- **Max Age** – the number of second bridge waits without receiving Spanning-Tree Protocol configuration messages before attempting a reconfiguration. Enter a number 6 through 40. (default is 20)
- **Forward Delay** -- the number of seconds a port waits before changing from its Spanning-Tree Protocol learning and listening states to the forwarding state. Enter a number 4 through 30. (default is 15)
- **Force Version** – normal: use RSTP; compatible: compatible with old STP protocol

■ **Port Configuration**

- **Aggregations** – Enable/disable the RSTP protocol on aggregation links
- **Protocol Enabled** – Enable/disable the RSTP protocol per port basis
- **Edge** – Enable/disable to expect a port to be an edge port (an end station) or a link to another STP device
- **Path Cost** – A value on a port that switch uses to determine which port are the forwarding ports. The lowest number is forwarding ports. The value can be set from 1 to 200000000 or “auto” to be automatically generated.

2.1.11 IGMP

The Internet Group Management Protocol (IGMP) is an internal protocol of the Internet Protocol (IP) suite. IGMP can manage the multicast traffic if the members (switches, router or other network devices) of group support IGMP. This switch provides IGMP snooping feature to detect IGMP queries, report packets and manage the IP multicast traffic through the switch. This feature can limit the forwarding multicast frames only to those ports that are a member of multicast group. Only **IPv4** IGMP frames are recognized for this system.

IGMP Configuration

IGMP Enabled	<input type="checkbox"/>
Router Ports	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/> 8 <input type="checkbox"/>
Unregistered IPMC Flooding enabled	<input checked="" type="checkbox"/>

VLAN ID	IGMP Snooping Enabled	IGMP Querying Enabled
1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

[Apply](#) [Refresh](#)

The following parameters are provided for configuring IGMP snooping for this system:

- **IGMP Enabled** – to globally enable/disable IGMP snooping function
- **Router Ports** – the port that is usually with source of multicast traffic stream
- **Unregistered IPMC Flooding Enabled** – to set forwarding option for unregistered (not joined) IP multicast traffic.
 - Enabled: to flood frames to every port
 - Disable: to forward frames only to those IGMP member ports

Two options can be set for each existing group:

- **IGMP Snooping Enabled** – to enable/disable snooping IGMP frames
- **IGMP Querying Enabled** – to enable/disable sending IGMP querying frames, in one

Ethernet section, there is only one Querier, and Querier is usually in router device.

For example, video traffic comes from port 8 which is connected to a router, and port 3,4,5 are connected to IGMP member, then the configuration may be set as below.

IGMP Configuration

IGMP Enabled	<input type="checkbox"/>
Router Ports	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/> 8 <input type="checkbox"/>
Unregistered IPMC Flooding enabled	<input checked="" type="checkbox"/>

VLAN ID	IGMP Snooping Enabled	IGMP Querying Enabled
1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

[Apply](#) [Refresh](#)

2.1.12 802.1x

A default diagram is shown below; users must contact the manager of RADIUS server, and then get IP, UDP port number (usually fixed at 1812) and secret to operate 802.1X.

Admin Mode:

- Auto: client will be authorized by authentication process
- Force Authorized: client will be authorized anyway
- Force Unauthorized: client won't be authorized anyway

Action: means execute command on single port or all ports when click

- Re-authenticate: authorized again on that port
- Force Reinitialize: force that port initialize

Parameters: Define time schedule on Re-authentication mode

The default diagram as shown below:

802.1X Configuration

Mode	Disabled <input type="button" value="▼"/>
RADIUS IP	0.0.0.0
RADIUS UDP Port	1812
RADIUS Secret	

Port	Admin Mode	Port State	Action	
1	Force Authorized <input type="button" value="▼"/>	802.1X Disabled	Re-authenticate	Force Reinitialize
2	Force Authorized <input type="button" value="▼"/>	802.1X Disabled	Re-authenticate	Force Reinitialize
3	Force Authorized <input type="button" value="▼"/>	802.1X Disabled	Re-authenticate	Force Reinitialize
4	Force Authorized <input type="button" value="▼"/>	802.1X Disabled	Re-authenticate	Force Reinitialize
5	Force Authorized <input type="button" value="▼"/>	802.1X Disabled	Re-authenticate	Force Reinitialize
6	Force Authorized <input type="button" value="▼"/>	802.1X Disabled	Re-authenticate	Force Reinitialize
7	Force Authorized <input type="button" value="▼"/>	802.1X Disabled	Re-authenticate	Force Reinitialize
8	Force Authorized <input type="button" value="▼"/>	802.1X Disabled	Re-authenticate	Force Reinitialize
			Re-authenticate All	Force Reinitialize All

[Parameters](#)

[Apply](#) [Refresh](#)

2.2 Monitoring

2.2.1. Port Statistics

Choose and click command manual, after execution, diagram will be shown as below; user can clear counter or refresh at will.

Statistics Overview for all ports

[Clear](#) [Refresh](#)

Port	Tx Bytes	Tx Frames	Rx Bytes	Rx Frames	Tx Errors	Rx Errors
1	220644	318	357684	4706	0	0
2	0	0	0	0	0	0
3	0	0	0	0	0	0
4	0	0	0	0	0	0
5	0	0	0	0	0	0
6	0	0	0	0	0	0
7	159288	237	1256323	17014	0	1
8	0	0	0	0	0	0

2.2.2 LACP Status

Choose and click command manual, after execution, diagram will shown like below, user can refresh at will.

LACP Status										
LACP Aggregation Overview		Group/Port	1	2	3	4	5	6	7	8
State			Green							
Legend										
Red	Down	Port link down								
0	Blocked	Port Blocked by RSTP. Number is Partner port number if other switch has LACP enabled								
Yellow	Learning	Port Learning by RSTP								
Green	Forwarding	Port link up and forwarding frames								
0	Forwarding	Port link up and forwarding by RSTP. Number is Partner port number if other switch has LACP enabled								

[Refresh](#)

LACP Port Status				
Port	Protocol Active	Partner Port Number	Operational Port Key	
1	no			
2	no			
3	no			
4	no			
5	no			
6	no			
7	no			
8	no			

2.2.3 RSTP Status

Choose and click command manual, after execution, diagram will be shown like below, user can refresh at will.

RSTP VLAN Bridge Overview						
VLAN Id	Bridge Id	Hello Time	Max Age	Fwd Delay	Topology	Root Id
1	32769:00-01-c1-00-00-02	2	20	15	Steady	This switch is Root!
RSTP Port Status						
Port/Group	Vlan Id	Path Cost	Edge Port	P2p Port	Protocol	Port State
Port 1						Non-STP
Port 2						Non-STP
Port 3						Non-STP
Port 4						Non-STP
Port 5						Non-STP
Port 6						Non-STP
Port 7						Non-STP
Port 8						Non-STP

2.2.4 IGMP Status

Choose and click IGMP status at command. After execution, diagram will be shown like below, user can refresh at will. There are IGMP v1, v2, v3 frames that will be shown in the network, our switch only support IGMP V2, but it will handle some IGMP V3 frames. If this switch is Querier, it will show Querier state and Query frames it transmitted. If it is not Querier, it only shows how many Querier frames it receives. Only one Querier in a network section, usually Querier is in router.

IGMP Status

VLAN ID	Querier	Queries transmitted	Queries received	v1 Reports	v2 Reports	v3 Reports	v2 Leaves
1	Disabled	0	0	0	0	0	0

Refresh

2.2.5 Ping

Ping Function

Ping parameters	
Target IP address	<input type="text"/>
Count	1 <input type="button" value="▼"/>
Time Out (in secs)	1 <input type="button" value="▼"/>

Ping Results	
Target IP address	0.0.0.0
Status	Test complete
Received replies	0
Request timeouts	0
Average Response Time (in ms)	0

Fill up the IP address you want to ping, set Time Out time and Counts. For example, IP = 192.168.1.141, count = 5, time out = 5 secs, then press “Apply”, then press “Refresh” after execution, diagram will shown below:

Ping Results	
Target IP address	192.168.1.141
Status	Test complete
Received replies	5
Request timeouts	0
Average Response Time (in ms)	4

2.3 Maintenance

2.3.1 Warm Reboot

Choose and click command manual, diagram will be shown like below. User can press Yes or No.



2.3.2 Factory Default

Choose and click command manual, diagram will be shown like below. User can press Yes or No



2.3.3 Firmware Update

Choose and click command manual, diagram will be shown, and then direct the location of the file that is to be updated, then press "upload". If successful, it will be shown below.



Press "yes" then you get new code to execute. **However, after activating the new code**, it is better to press "**reset button**" at front panel so that the new default setting will be also updated, because different version code is sometimes with different initial default setting.

2.3.4 Config File

Choose and click command manual, diagram will be shown, and then direct the location of the file that is to be backup, give a name, then press "Backup".

Configuration File Backup/Restore

Configuration File Backup

Backup

Choose and click command manual, diagram will be shown, and then direct the location of the file that to be restored, then press “Restore”. It will show transfer completed if it went successful.

Configuration File Restore

Restore

Chapter 3 Terminal Mode management

Terminal mode is easy to operate, it is useful when in-band Ethernet communication is malfunctioned, or user is used to CLI interface operation, or he wants to know some parameter setting. For example, before in-band management through Ethernet, user has to know the IP address, subnet mask ...etc, he may get this information by checking the configuration under IP command, he also may try to modify the IP address, CPU management group used in tag-VLAN configuration operation, or any other function through terminal mode. And more conveniently, if user is used to configure the tag-VALN through terminal mode, he won't be interfered by the CPU management group issue; CPU is always being connected with him while he is configuring the VLAN.

User must set up the terminal parameters, such as hyper terminal in Microsoft Window.

Select COM #: COM 1, COM 2 ...

Set Baud rate to: 115,200, per second

Set Attribute to 8, None, 1, None (8 bit, No parity, 1 stop bit, No protocol in hardware)

Once terminal is connected, enter the password, the basic operation are shown, and then when press “?” the **commands at top level** will be shown as below.

```
>?
Commands at top level:
System      - System commands
Console     - Console commands
Port        - Port commands
MAC         - MAC commands
VLAN        - 802.1q (Tag-based) VLAN commands
Aggr        - Aggregation commands
LACP        - IEEE 802.3ad Link Aggregation commands
RSTP        - IEEE 802.1w Rapid Spanning Tree commands
User Group  - User Group (Port-based VLAN) commands
QoS         - QoS commands
Mirror      - Mirror commands
IP          - IP commands
Dot1x      - Dot1x commands
IGMP      - IGMP Snooping commands
>
```

Key in “Command” and then key in “?”, second level will be shown, for example:

```

>vlan
VLAN>?
Commands at VLAN level:
VLAN Configuration [<portlist>]
VLAN Add <vidlist> [<portlist>]
VLAN Delete <vidlist>
VLAN Lookup <vidlist>
VLAN Aware [<portlist>] [enable|disable]
VLAN PVID [<portlist>] [<vid>|none]
VLAN Frame Type [<portlist>] [all|tagged]
VLAN Ingress Filtering [<portlist>] [enable|disable]
VLAN Egress Tagging [<portlist>] [enable/disable]

```

```

VLAN>conf
VLAN Configuration:
  Port  Aware  PVID  Ingress Filtering  Frame Type  Egress Tagging
    1:  disabled  1      disabled          All        disabled
    2:  disabled  1      disabled          All        disabled
    3:  disabled  1      disabled          All        disabled
    4:  disabled  1      disabled          All        disabled
    5:  disabled  1      disabled          All        disabled
    6:  disabled  1      disabled          All        disabled
    7:  disabled  1      disabled          All        disabled
    8:  disabled  1      disabled          All        disabled

  Entries in permanent table:
    1:  1,2,3,4,5,6,7,8
VLAN>

```

If user wants to check the IP related information, one may do as below:

```

IP>conf
IP Configuration:
  dhcp: disabled
  Static Address: 192.168.1.100
  Subnet Mask: 255.255.255.0
  Gateway: 192.168.1.254
  VID: 1
  HTTP Port No.: 80
  Mode: enabled
  tftp: disabled

```

All other function can be operated likewise.

Type “up” or “/” go back to previous page.

The end